

AMENDMENTS TO THE CLAIMS

Claim 1. (currently amended) A purified and isolated catalytic domain from a $\beta(1,4)$ -galactosyltransferase I ~~corresponding to~~ consisting of SEQ ID NO: 6, and ~~comprising~~ consisting of a conservative amino acid exchange at amino acid position 344 of SEQ ID NO: 6, wherein the amino acid exchange at position 344 of SEQ ID NO: 6 is selected from M344H, M344E, M344A, M344S, or M344Q, and wherein the catalytic domain catalyzes formation of galactose- $\beta(1,4)$ -N- acetylglucosamine bond in the presence of magnesium, and further comprising a conservative amino acid exchange at an amino acid position corresponding to amino acid position 342 of SEQ ID NO: 6.

Claim 2. (original) The catalytic domain according to claim 1, wherein the rate of formation of the galactose- $\beta(1,4)$ -N-acetylglucosamine bond is at least two-fold, five-fold, ten-fold, or one hundred-fold greater than wild-type $\beta(1,4)$ -galactosyltransferase I in the presence of magnesium.

Claim 3. (cancelled)

Claim 4. (original) The catalytic domain of claim 1, wherein histidine is exchanged for methionine at an amino acid position corresponding to amino acid position 344 of SEQ ID NO: 6.

Claim 5. (cancelled)

Claim 6. (original) The catalytic domain according to claim 5, wherein threonine is exchanged for cysteine at amino acid position 342.

Claim 7. (original) A polypeptide comprising the catalytic domain according to claim 1.

Claims 8 - 14. (cancelled)

Claim 15. (currently amended) A purified and isolated catalytic domain from a $\beta(1,4)$ -galactosyltransferase I ~~corresponding to~~ consisting of SEQ ID NO: 6, and consisting of ~~comprising~~ a conservative amino acid exchange at amino acid position 344 of SEQ ID NO: 6, wherein the amino acid exchange at position 344 of SEQ ID NO: 6 is selected from M344H, M344E, M344A, M344S, or M344Q, and wherein the catalytic domain, catalyzes formation of an N-acetylgalactosamine- $\beta(1,4)$ -N-acetylglucosamine bond in the presence of magnesium.

Claims 16 - 21. (cancelled)

Claim 22. (previously presented) A purified and isolated catalytic domain from $\beta(1,4)$ -galactosyltransferase I of claim 15 wherein the domain catalyzes formation of an N-acetylgalactosamine- $\beta(1,4)$ -glucose bond in the presence of α -lactalbumin and magnesium.

Claims 23 - 27. (cancelled)

Claim 28. (original) A polypeptide comprising the catalytic domain according to claim 22.

Claims 29 - 47. (cancelled)

Claim 48. (previously presented) A polypeptide comprising the catalytic domain according to claim 15.

Claims 49 - 96. (cancelled)

Claim 97. (previously presented) The catalytic domain according to claim 15, further comprising a conservative amino acid substitution at an amino acid position corresponding to amino acid position 342 of SEQ ID NO: 6.

Claim 98. (previously presented) The catalytic domain according to claim 96, wherein threonine is exchanged for cysteine at amino acid position 342.